

## \* Code Design :

- Designer will specify how processing will be perform in code design step.
- Code is a group of character or digit that identifies & describe any item.

eg. - PINCODE NO.

- The purpose of code is to make the task is easy for identification & retrieval of informations of item.

## → Principle of Code Design :

1. Uniqueness
2. Compactness
3. Uniformity
4. Expansibility
5. Simplicity
6. Versetality
7. Clarification
8. Stability
9. Meaningfullness

$$u^2 s^2 v + c^2 EM$$

### 1.) Uniqueness :

- The code for any particular item Should be

unique.

- eg. University exam seatno should be unique for each student.

## 2) Compactness:

- The length of code should be minimum as possible
- eg. M & F can be used for Male & Female.

## 3) Uniformity:

- Uniform sign & Format is highly desirable in mechanized data processing system to avoid inconsistency and confusion in result.

## 4) Expansibility:

- The code structure should allow growth.
- Enough time should be provided in construction itself. for future expansion.

## 5) Simplicity:

- The code should be simple to use and easy to understand by each user with minimum experience.

#### 6) Versatility:

- It should be easy to modify to reflect necessary changes in condition, characteristic & relationship of encoded entities.

#### 7) Classification:

- So, the user sorted output data in pre determine format is valuable.

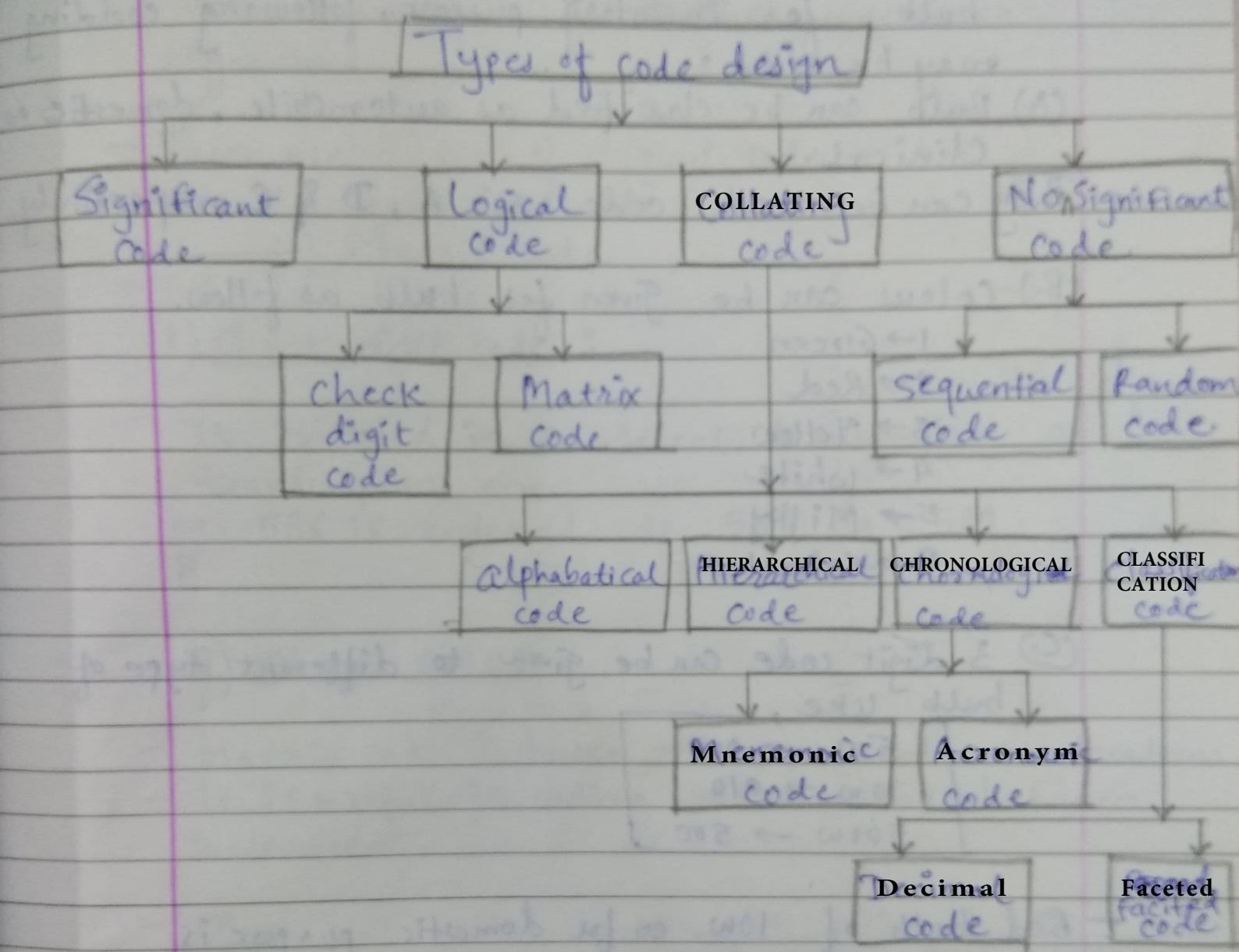
#### 8.) Stability:

- Code should not be updated or modify frequently
- Modification in code are costly, claricle task degrade the system & also affect user efficiency

#### 9.) Meaningfullness:

- code should be meaningful so that it reflect characteristic of encoded entities.

# → Types of code design or Classification of Code design :



## 1.) Significant code:

- Digit or letter is identifiable characteristic of item.

- It is used in Inventory System.
- e.g. bulb manufacturing Co. uses electronic bulb for inventory purpose, following coding may be used,
  - (A) Bulb can be classified as automobile, domestic or Clinical.
- They can be used code as A, D & C respectively.

(B.) Colour can be given for bulb as follow.

1 → Green

2 → Red

3 → Yellow

4 → White

5 → Milky

~~6 → colorless~~

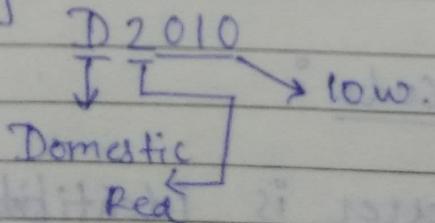
(C.) 3 digit code can be given to different type of bulb like,

5W → 005

10W → 010

500W → 500

- Red bulb of 10W for domestic purpose is represented by,



## 2) logical code:

- Individual values are define or derived in conjunction with consistant, well define procedure or algorithms.
- There are 2 type of logical code -
  - i) check digit code
  - ii) Matrix code

### i) check digit code:

- It is used to detect transposition or transcription errors.
- eg. 586 is entered as 568 or 589

### ii) Matrix Code:

- Matrix code is based on x,y coordinate locations.
- It is useful in coding relationship between 2 entities.
- eg.

70      30      90  
valbad      Navsari      surat      Vadodara.

from\to	1	2	3	4
1	0	90	120	190
2	90	0	30	100
3	120	30	0	70
4	190	100	70	0

1 → Vadodara

2 → Surat

3 → Navsari

4 → Valbad

- value of (2,4) grid is 100, indicate distance of swat to valsad is 100km.

### 3.) Collating Code:

- Collating code structure is design so that when sorted by code no , the items represented by code are pre determine Sequence.
- There are 4 types of Collating Code as follow :
  - i) Alphabatical code
  - ii) Hierarchical code
  - iii) Chronological code
  - iv) Classification code

#### i) Alphabatical code:

- For effectiveness , alphabatical code required placement of all item in alphabetical sequence.
- eg. Student name are stored according to <sup>1<sup>st</sup></sup> name & then middle name & then lastname.

#### ii) Hierarchical code:

- It provide top down interpretation for item.
- Every item is factored into groups , sub groups etc.
- eg. Sales person can be grouped into region wise  
(North, South, West, East)

and then group wise (01-12) and then sales person no (00, 01, 02 ..., 99) so that sales person code is represented by SO14F

### iii) chronological code:

- It is assign in the order of event. So that each code has higher value than last code assign
- e.g. preparing birth registrations according to DOB Starting with earliest born
- There are 2 methods to doing abbreviation
  - 1) **Mnemonic** code
  - 2) **Acronym** code.
- Mnemonic code help us to convey meanings quickly.
- e.g. BCA  $\rightarrow$  Bachelor Of Computer Application.  
MCA  $\rightarrow$  Master of Computer Application.
- Acronymic code is particular type of mnemonic representation construction ~~consist~~ of 1st letter or several letter of word.
- e.g. FORTRAN - formula TRANslator.  
COBOL - Common Business Oriented Language.

#### iv) Classification codes

- It place separate entity such as events, people, objects into different groups called classes.
- There are of 2 types:
  - i) Decimal code
  - ii) **Faceted** code.
- Decimal code is use in library for uniquely identifying book.
  - Science → 01
  - Commerce → 02
  - Arts → 03
  - Comp. Science → 01.01
  - Zoology Sci → 01.02
  - Engineering → 01.01.02
  - RDBMS → 01.01.02
- **Faceted** code represent different side. [characteristic] of decoded item.
- Each characteristic represent many characteristics as require
- eg. **Footwear** manufacturer co. assign code for product with the help of different side of **Footwear**.

Type	Gender	Size	Material
1) sandal (SAN)	M	12	Lether (LEH)
2) shoe (SHO)	F	8	Rubber - (RUB)
3) kappal (CHA)	CHA		Plastic lthr (PLA)

[ SANPOLEH ]

represented sandal, female, of size 12 with leather material.

#### 4) Non Significant code:

- no information by itself.
- e.g. Range of no. may be allocated to customer a/c no.
- There are of 2 type
  - i) Sequential code
  - ii) random code.
- i) Sequential code is either no. or letter assigned in series. They tell order in which event has occurred.
- e.g. Numbering of checkbook is done sequentially.
- ii) Random code is thrown from no. list which is not detectable in order of sequence. They are generated through the computer program. or it can be available in statistical table.

e.g. The item following the item with code no 800 may be given any no. selected from provided list.

- Random code is used for security purpose.